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DATE: Monday, November 25, 2002

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result set

DB=USPT; PLUR=YES; OP=ADJ

L5	l1 and leucine rich	1	L5
L4	L3 and transgenic	13	L4
L3	apomixis or apomic\$	50	L3
L2	apomixis or ampomic\$	41	L2
L1	serk or somatic embryogenesis receptor like kinase	9	L1

END OF SEARCH HISTORY

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NEWS 8 Apr 22 Federal Research in Progress (FEDRIP) now available
NEWS 9 Jun 03 New e-mail delivery for search results now available
NEWS 10 Jun 10 MEDLINE Reload
NEWS 11 Jun 10 PCTFULL has been reloaded
NEWS 12 Jul 02 FOREGE no longer contains STANDARDS file segment
NEWS 13 Jul 22 USAN to be reloaded July 28, 2002;
saved answer sets no longer valid
NEWS 14 Jul 29 Enhanced polymer searching in REGISTRY
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NEWS 17 Aug 08 PHARMAMarketLetter(PHARMAML) - new on STN
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NEWS 19 Aug 19 Aquatic Toxicity Information Retrieval (AQUIRE)
now available on STN
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NEWS 21 Aug 19 The MEDLINE file segment of TOXCENTER has been reloaded
NEWS 22 Aug 26 Sequence searching in REGISTRY enhanced
NEWS 23 Sep 03 JAPIO has been reloaded and enhanced
NEWS 24 Sep 16 Experimental properties added to the REGISTRY file
NEWS 25 Sep 16 Indexing added to some pre-1967 records in CA/CAPLUS
NEWS 26 Sep 16 CA Section Thesaurus available in CAPLUS and CA
NEWS 27 Oct 01 CASREACT Enriched with Reactions from 1907 to 1985
NEWS 28 Oct 21 EVENTLINE has been reloaded
NEWS 29 Oct 24 BEILSTEIN adds new search fields
NEWS 30 Oct 24 Nutraceuticals International (NUTRACEUT) now available on STN
NEWS 31 Oct 25 MEDLINE SDI run of October 8, 2002
NEWS 32 Nov 18 DKILIT has been renamed APOLLIT
NEWS 33 Nov 25 More calculated properties added to REGISTRY

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FILE 'BIOSIS' ENTERED AT 10:09:50 ON 25 NOV 2002
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=> s serk or somatic embryogenesis receptor like kinase
L1 22 SERK OR SOMATIC EMBRYOGENESIS RECEPTOR LIKE KINASE

=> dup rem l1
PROCESSING COMPLETED FOR L1
L2 14 DUP REM L1 (8 DUPLICATES REMOVED)

=> d 1-14 ti

L2 ANSWER 1 OF 14 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 1
TI Vectors comprising chemical inducible promoters used to obtain transgenic plants with a silent marker

L2 ANSWER 2 OF 14 CAPLUS COPYRIGHT 2002 ACS
TI Use of somatic embryogenesis receptor kinase 1 gene for induction of apomixis in transgenic plants

L2 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2002 ACS
TI Chemical inducible promoters used to obtain transgenic plants with a silent marker

L2 ANSWER 4 OF 14 CAPLUS COPYRIGHT 2002 ACS
TI Increasing the efficiency of plant regeneration by introduction of genes for receptor-like kinases and its use in vegetative propagation of transgenic plants

L2 ANSWER 5 OF 14 AGRICOLA
TI Characterization of the Arabidopsis thaliana **somatic embryogenesis receptor-like kinase 1** protein.

L2 ANSWER 6 OF 14 AGRICOLA DUPLICATE 2
TI The Arabidopsis SOMATIC EMBRYOGENESIS RECEPTOR KINASE 1 gene is expressed in developing ovules and embryos and enhances embryogenic competence in culture. [Erratum: Jan 2002, v. 128 (1), p. 314.]

L2 ANSWER 7 OF 14 CAPLUS COPYRIGHT 2002 ACS

TI Expression of the *Daucus carota* somatic embryogenesis receptor kinase (DcSERK) protein in insect cells

L2 ANSWER 8 OF 14 AGRICOLA DUPLICATE 3
 TI Molecular characterisation of two novel maize LRR receptor-like kinases, which belong to the **SERK** gene family.

L2 ANSWER 9 OF 14 CAPLUS COPYRIGHT 2002 ACS
 TI Protein and cDNA sequences of eight **SERK**-interacting proteins, and apomixis conferred by expression of said proteins

L2 ANSWER 10 OF 14 AGRICOLA DUPLICATE 4
 TI Embryogenic cells in *Dactylis glomerata* L. (Poaceae) explants identified by cell tracking and by **SERK** expression.

L2 ANSWER 11 OF 14 CAPLUS COPYRIGHT 2002 ACS
 TI Signals and their transduction in early plant embryogenesis

L2 ANSWER 12 OF 14 CAPLUS COPYRIGHT 2002 ACS
 TI Signals and their transduction in early plant embryogenesis

L2 ANSWER 13 OF 14 CAPLUS COPYRIGHT 2002 ACS
 TI Inducing the formation of apomictic seed by ectopic expression of genes inducing embryogenesis

L2 ANSWER 14 OF 14 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 5
 TI A leucine-rich repeat containing receptor-like kinase marks somatic plant cells competent to form embryos

=> d pi

L2 ANSWER 1 OF 14 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6452068	B1	20020917	US 1999-439535	19991112
US 6063985	A	20000516	US 1998-14592	19980128
WO 2001034820	A2	20010517	WO 2000-US31034	20001113
WO 2001034820	A3	20020117		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

EP 1232273 A2 20020821 EP 2000-977176 20001113

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

=> d 2 pi

L2 ANSWER 2 OF 14 CAPLUS COPYRIGHT 2002 ACS

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002083912	A2	20021024	WO 2002-EP3958	20020409

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UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
 CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

=> d 3 pi

L2 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2002 ACS
 PATENT NO. KIND DATE APPLICATION NO. DATE

 PI WO 2001034820 A2 20010517 WO 2000-US31034 20001113
 WO 2001034820 A3 20020117
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 ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
 BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
 US 6452068 B1 20020917 US 1999-439535 19991112
 EP 1232273 A2 20020821 EP 2000-977176 20001113
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

=> d 4 ab

L2 ANSWER 4 OF 14 CAPLUS COPYRIGHT 2002 ACS
 AB The invention relates to the field of regeneration of cells and the vegetative propagation of (micro)-organisms or specific parts such as tissues or organs thereof, for example of those cells grown in tissue or organ culture, and more in particular to the seedless propagation of plants. The invention provides a culture method for propagation of a plant from plant starting material wherein during regeneration of said starting material, esp. in the phase of the development of the shoot-root body plan, root or shoot initiation is stimulated by a recombinant gene product or functional fragment thereof, for example derived from a gene involved in the regulation of plant development allowing reducing or omitting exogenous phytohormone addn. to said culture. This invention provides DNA and protein sequence of a group of receptor-like kinase (RKS) genes were isolated from Arabidopsis thaliana. Transgenic plants were created by transforming the A. thaliana gene for receptor-like kinase into wild type Arabidopsis. Compared to the wild type plants, the transgenic plant could regenerate from leaf and shoot tissues.

=> d 4 [i

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L2 ANSWER 4 OF 14 CAPLUS COPYRIGHT 2002 ACS
 PATENT NO. KIND DATE APPLICATION NO. DATE

 PI EP 1094113 A1 20010425 EP 1999-203480 19991022
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO
 WO 2001029240 A2 20010426 WO 2000-NL765 20001020

WO 2001029240 A3 20020328
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
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LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
EP 1226262 A2 20020731 EP 2000-980076 20001020
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL

=> d 5 si

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L2 ANSWER 5 OF 14 AGRICOLA

SO 2001? 162 p. : ill. ; 24 cm

Publisher: [Wageningen : s.n., 2001?]

ISBN: 9058084272.

=> d 5 ab

L2 ANSWER 5 OF 14 AGRICOLA

=> d 6 so

L2 ANSWER 6 OF 14 AGRICOLA

DUPLICATE 2

SO Plant physiology, Nov 2001. Vol. 127, No. 3. p. 803-816

Publisher: Rockville, MD : American Society of Plant Physiologists, 1926-

CODEN: PLPHAY; ISSN: 0032-0889

=> d 6 ab

L2 ANSWER 6 OF 14 AGRICOLA

DUPLICATE 2

AB We report here the isolation of the Arabidopsis **SOMATIC**

EMBRYOGENESIS RECEPTOR-LIKE KINASE 1

(AtSERK1) gene and we demonstrate its role during establishment of somatic
embryogenesis in culture. The AtSERK1 gene is highly expressed during
embryogenic cell formation in culture and during early embryogenesis. The
AtSERK1 gene is first expressed in planta during megasporogenesis in the
nucellus of developing ovules, in the functional megaspore, and in all
cells of the embryo sac up to fertilization. After fertilization, AtSERK1
expression is seen in all cells of the developing embryo until the heart
stage. After this stage, AtSERK1 expression is no longer detectable in the
embryo or in any part of the developing seed. Low expression is detected
in adult vascular tissue. Ectopic expression of the full-length AtSERK1
cDNA under the control of the cauliflower mosaic virus 35S promoter did
not result in any altered plant phenotype. However, seedlings that
overexpressed the AtSERK1 mRNA exhibited a 3- to 4-fold increase in
efficiency for initiation of somatic embryogenesis. Thus, an increased
AtSERK1 level is sufficient to confer embryogenic competence in culture.

=> d 7 ab

L2 ANSWER 7 OF 14 CAPLUS COPYRIGHT 2002 ACS

AB The *Daucus carota* somatic embryogenesis receptor kinase (DcSERK) gene serves as marker to monitor the transition from somatic into embryogenic plant cells. To det. the intrinsic biochem. properties of the DcSERK protein, a predicted transmembrane receptor, the kinase domain was expressed as a 40-kDa his-tag fusion protein in the baculovirus insect cell system. The kinase domain fusion protein was able to autophosphorylate in vitro. Phosphoamino acid anal. of the autophosphorylated DcSERK protein revealed that it was autophosphorylated on serine and threonine residues. This is the first evidence of the biochem. characterization of a transmembrane receptor kinase from embryogenic plant cell cultures.

=> d 7 so

L2 ANSWER 7 OF 14 CAPLUS COPYRIGHT 2002 ACS

SO Biochimie (2001), 83(5), 415-421
CODEN: BICMBE; ISSN: 0300-9084

=> d 8 ab

L2 ANSWER 8 OF 14 AGRICOLA

DUPLICATE 3

AB Genes encoding two novel members of the leucine-rich repeat receptor-like kinase (LRR-RLK) superfamily have been isolated from maize (*Zea mays* L.). These genes have been named ZmSERK1 and ZmSERK2 since features such as a putative leucine zipper (ZIP) and five leucine rich repeats in the extracellular domain, a proline-rich region (SPP) just upstream of the transmembrane domain and a C-terminal extension (C) after the kinase domain identify them as members of the **SERK (somatic embryogenesis receptor-like kinase)** family. ZmSERK1 and ZmSERK2 are single-copy genes and show 79% identity among each other in their nucleotide sequences. They share a conserved intron/exon structure with other members of the **SERK** family. In the maize genome, ZmSERK1 maps to position 76.9 on chromosome arm 10L and ZmSERK2 to position 143.5 on chromosome arm 5L, in regions generally not involved in duplications. ZmSERK1 is preferentially expressed in male and female reproductive tissues with strongest expression in microspores. In contrast, ZmSERK2 expression is relatively uniform in all tissues investigated. Both genes are expressed in embryogenic and non-embryogenic callus cultures.

=> d 8 so

L2 ANSWER 8 OF 14 AGRICOLA

DUPLICATE 3

SO Planta, May 2001. Vol. 213, No. 1. p. 1-10
Publisher: Berlin ; New York : Springer-Verlag, 1925-
CODEN: PLANAB; ISSN: 0032-0935

=> d 9 ab

L2 ANSWER 9 OF 14 CAPLUS COPYRIGHT 2002 ACS

AB The present invention relates to a method for increasing the probability of vegetative reprodn. of a new plant generation by transgenic expression of a gene encoding a protein acting in the signal transduction cascade triggered by the Somatic Embryogenesis Receptor Kinase (**SERK**). The invention provides protein and cDNA sequences of eight **SERK**-interacting proteins, which are believed to be members of either the squamous-promoter binding protein (SBP) family of transcription factors

or 14-3-3 type lambda proteins. Apomictic seeds resulting from the methods of the invention, plants and progeny obtained through germination of such seeds, and genes encoding proteins acting in the signal transduction cascade triggered by **SERK** constitute further subject matters of the invention. The present invention is exemplified by transgenic expression of a **SERK**-interacting protein in Arabidopsis.

=> d 9 pi

L2 ANSWER 9 OF 14 CAPLUS COPYRIGHT 2002 ACS
PATENT NO. KIND DATE APPLICATION NO. DATE

PI WO 2000024914 A2 20000504 WO 1999-EP7972 19991020
WO 2000024914 A3 20000713
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
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BR 9914724 A 20010807 BR 1999-14724 19991020
EP 1123407 A2 20010816 EP 1999-953900 19991020
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US 2002069433 A1 20020606 US 2001-839185 20010419

=> d 10 so

L2 ANSWER 10 OF 14 AGRICOLA DUPLICATE 4
SO Plant cell reports, June 2000. Vol. 19, No. 7. p. 718-726
Publisher: Berlin : Springer-Verlag.
CODEN: PCRPD8; ISSN: 0721-7714

=> d 10 ab

L2 ANSWER 10 OF 14 AGRICOLA DUPLICATE 4

=> d 11 ab

L2 ANSWER 11 OF 14 CAPLUS COPYRIGHT 2002 ACS
AB A review with 25 refs. Several observations suggest that the development of somatic embryos from suspension cells in vitro depends on signals that derive from other suspension cells. If there is a correspondence between somatic and zygotic embryos, then the signals found in vitro must also be acting on zygotic embryos. Two examples of such signalling systems will be described. The first stems from the observation that carrot EP3 class IV endochitinases can rescue somatic embryos of the temp.-sensitive cell line ts11. Employing whole mount in situ hybridization it was found that a subset of the cells in embryogenic and non-embryogenic suspension cultures, including ts11, express EP3 genes. No expression was found in somatic embryos. In carrot plants EP3 genes are expressed in the inner integument cells of young fruits and in a specific subset of cells, located in the middle of the endosperm of mature seeds. No expression was found in zygotic embryos. These results suggest that the EP3 endochitinase has a "nursing" function during zygotic embryogenesis, and that this function can be mimicked by suspension cells during somatic

embryogenesis. Signals aimed at the embryo must also be perceived, and as the second example of a signalling pathway involved in embryogenesis, the leucine-rich repeat contg. Somatic Embryogenesis Receptor Kinase (**SERK**) will be discussed. During somatic embryogenesis, **SERK** expression is detected first in single cells and disappears at the early globular stage. During zygotic embryogenesis, **SERK** expression was detectable transiently in young zygotic embryos of up to 100 cells. These results demonstrate that competent cell formation and early somatic embryogenesis require a highly specific signal transduction chain also found during zygotic embryogenesis. Whether both examples of signal transduction chains are related is not known.

=> d 11 so

L2 ANSWER 11 OF 14 CAPLUS COPYRIGHT 2002 ACS
 SO Developments in Plant Genetics and Breeding (2000), 6, 141-148
 CODEN: DPGBD6; ISSN: 0168-7972

=> d 13 ab

L2 ANSWER 13 OF 14 CAPLUS COPYRIGHT 2002 ACS
 AB A method of inducing the formation of apomictic (asexual) seed for use in plant breeding is described. An expression cassette for a gene inducing embryogenesis that directs expression to the vicinity of the embryo sac is introduced into the plant. The gene product may be a leucine repeat rich receptor kinase modified by deleting or inactivating the ligand-binding domain. The **SERK** gene encoding a putative receptor kinase of carrot was cloned by differential screening. Induction of expression of the gene was closely correlated with the presence of competent single cells during hypocotyl activation with 2,4-D and expression was first detectable after 3 days of activation. Expression of the gene in embryonic cell cultures also corresponded with the occurrence of competent cells. The gene is also transiently expressed in zygotic embryogenesis.

=> d 13 pi

L2	ANSWER 13 OF 14 CAPLUS COPYRIGHT 2002 ACS				
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 9743427	A1	19971120	WO 1997-EP2443	19970513
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	CA 2254839	AA	19971120	CA 1997-2254839	19970513
	AU 9729539	A1	19971205	AU 1997-29539	19970513
	AU 713130	B2	19991125		
	EP 915984	A1	19990519	EP 1997-923882	19970513
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	CN 1218510	A	19990602	CN 1997-194634	19970513
	BR 9709098	A	19990803	BR 1997-9098	19970513
	JP 2000510342	T2	20000815	JP 1997-540288	19970513
	KR 2000011136	A	20000225	KR 1998-709296	19981114

=> d 14 agb

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REENTER DISPLAY FORMAT FOR ALL FILES (FILEDEFAULT):ab

L2 ANSWER 14 OF 14 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 5
AB The first somatic single cells of carrot hypocotyl explants having the competence to form embryos in the presence of 2,4-dichlorophenoxyacetic acid (2,4-D) were identified using semi-automatic cell tracking. These competent cells are present as a small subpopulation of enlarged and vacuolated cells derived from cytoplasm-rich and rapidly proliferating non-embryogenic cells that originate from the provascular elements of the hypocotyl. A search for marker genes to monitor the transition of somatic into competent and embryogenic cells in established suspension cell cultures resulted in the identification of a gene transiently expressed in a small subpopulation of the same enlarged single cells that are formed during the initiation of the embryogenic cultures from hypocotyl explants. The predicted amino acid sequence and in vitro kinase assays show that this gene encodes a leucine-rich repeat contg. receptor-like kinase protein, designated **Somatic Embryogenesis Receptor-like Kinase (SERK)**. Somatic embryos formed from cells expressing a **SERK** promoter-luciferase reporter gene. During somatic embryogenesis, **SERK** expression ceased after the globular stage. In plants, **SERK** mRNA could only be detected transiently in the zygotic embryo up to the early globular stage but not in unpollinated flowers nor in any other plant tissue. These results suggest that somatic cells competent to form embryos and early globular somatic embryos share a highly specific signal transduction chain with the zygotic embryo from shortly after fertilization to the early globular embryo.

=> d 14 so

L2 ANSWER 14 OF 14 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 5
S0 Development (Cambridge, United Kingdom) (1997), 124(10), 2049-2062
CODEN: DEVPED; ISSN: 0950-1991

=> s atchitiv

L3 5 ATCHITIV

=> s l3 and promoter

L4 5 L3 AND PROMOTER

=> dup rem l4

PROCESSING COMPLETED FOR L4

L5 2 DUP REM L4 (3 DUPLICATES REMOVED)

=> d 1-2 ti

L5 ANSWER 1 OF 2 AGRICOLA DUPLICATE 1
TI Expression pattern of the Arabidopsis thaliana AtEP3/**AtchitIV** endochitinase gene.

L5 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2
TI Arabidopsis thaliana class IV chitinase is early induced during the interaction with Xanthomonas campestris

=> d 1-2 ab

L5 ANSWER 1 OF 2 AGRICOLA DUPLICATE 1
AB The carrot (*Daucus carota* L.) EP3 chitinase was shown to be essential for somatic embryo formation in a carrot mutant cell line. We identified the *Arabidopsis thaliana* (L.) Heynh. ortholog of the carrot EP3-3 chitinase gene, designated as AtEP3/**AtchitIV** and analyzed its expression in *Arabidopsis* by means of reverse transcription-polymerase chain reaction and **promoter::beta-glucuronidase** and luciferase fusions. As in carrot, the gene is expressed during somatic embryogenesis in "nursing" cells surrounding the embryos but not in embryos themselves. In plants, gene expression is found in mature pollen and growing pollen tubes until they enter the receptive synergid, but not in endosperm and integuments as in carrot. Post-embryonically, expression is found in hydathodes, stipules, root epidermis and emerging root hairs, indicating that the *Arabidopsis* chitinase may have a function that is not restricted to embryogenesis.

L5 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2
AB Endochitinases are widely distributed among higher plants, including a no. of important crop species. They are generally considered to be involved in plant defense against potential pathogens. A class IV chitinase gene (**AtchitIV**) from *Arabidopsis thaliana* was cloned. Southern blot anal. allowed the detection of two cross-hybridizing genes in the *A. thaliana* genome. **AtchitIV** transcripts are detected in seedpods, but not in roots, inflorescence stems, leaves and flowers of healthy plants. The transcripts accumulated very rapidly in leaves after inoculation with *Xanthomonas campestris*. Maximum mRNA accumulation was reached one hour after infection and decreased to very low levels 72 h after induction. This result suggests an involvement of **AtchitIV** in the initial events of the hypersensitive reaction. Nevertheless, *A. thaliana* plants transformed with the gus gene under the control of a class IV chitinase bean **promoter**, showed GUS activity in seed embryos. These data, together with the constitutive expression of the endogenous gene in the seedpods, points to addnl. physiol. roles for this protein.

=> d 1-2 so

L5 ANSWER 1 OF 2 AGRICOLA DUPLICATE 1
SO Planta, Mar 2001. Vol. 212, No. 4. p. 556-567
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SO FEBS Letters (1997), 419(1), 69-75
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